

Work Order ID 86930

86930

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July-09-12 2:50:10 PM

Item ID: D205-634-141 Accept *N900040100* Setup Start *NS1*
 Revision ID: Stop *NS2*
 Item Name: Replacement Skidtube
 Start Date: 7/09/12 Start Qty: 1.00 *1* Cust Item ID:
 Required Date: 8/10/12 Req'd Qty: 1.00 *1* Customer:
 Reference:

Approvals: Process Plan: MLJ Date: 12/07/10 Tooling: _____ Date: _____ Run Start *NR1*
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

| Sequence ID/ Work Center ID | Operation Description | Set Up/ Run Hours | Tool ID | Tool # | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
|--------------------------------|--|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
| Draw Nbr | Revision Nbr | | | | | | | | |
| D2580-047 | (DEO) revE | | | | | | | | |
| 100 | | 0.00 | | | | | | | |
| *100* | DOCUMENT CONTROL | | | | | | | | |
| DC | Memo | 0.00 | | | | | | | |
| Document Control | Photocopy D205-634 bluefile & type labels per PPP D205-634-141 | CHG003 | | | | | | | |

NA 10

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
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NOTE: Date & initial all entries

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Item ID: D205-634-141

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Replacement Skidtube

Start Date: 7/09/12 Start Qty: 1.00

1

Cust Item ID:

Required Date: 8/10/12 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start *NR1*

Stop *NR2*

| Sequence ID/ Work Center ID | Operation Description | Set Up/ Run Hours | Tool ID | Tool # | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|

110

0.00

110

Skidtubes

0.00

Skidtubes

Memo

1- Inspect mat'l D2500-1-190 for damage

2-Cut D2500-1-190 per Dwg D2580 if necessary/Debur ends

3-Drill pilot holes using DT8149, drill #30 hole (3.630 REF) using DT8149 and SPOT drill #30 (5.338 & 5.985 REF) using DT8149. Open holes to finished size except for (4) AFT spot drilled holes as per dwg D2580 sheet 7.

4-Drill pilot holes using drill jig DT 8149 and open holes to finish size

5-Acid etch and Alodine tube per QSI 005 4.1

6- Install web as per dwg using sikaflex

A/R Sikaflex Batch #: 122413

120

0.00

120

BENDING MACHINE - SKIDTUBES

0.00

CNC Bend 1

Memo

1-Bend as per program D2580.C on CNC Bender and Folio FT 16

2-Cut tubes as per Dwg. D2580

3- Scribe batch# in aft end of tube

CNC Delta 100 Bender

Handwritten notes and signatures: 12-8-28, 12/08/28, 12-8-29, and various initials.

| W/O: | | WORK ORDER CHANGES | | | | | |
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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 Item Name: Replacement Skidtube
 Start Date: 7/09/12 Start Qty: 1.00 ***1*** Cust Item ID:
 Required Date: 8/10/12 Req'd Qty: 1.00 ***1*** Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

| Sequence ID/ Work Center ID | Operation Description | Set Up/ Run Hours | Tool ID | Tool # | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
|--------------------------------|---|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
| 130 | Skidtubes | 0.00 | | | | | | | |
| *130* | | | | | | | | | |
| Skidtubes | Memo | 0.00 | | | | | | | |
| Skidtubes | 1-Deburr ends after cutting and remove bending marks. Prepare tube for welding D2576-3 step remove alodine as required. | | | | | | | | |
| | 2-Locating from most fwd saddle hole, drill most fwd wearplate hole using DT9793 (10.832 REF) as per dwg D2580 sheet 7. | | | | | | | | |
| | 3-Open run-on wearplate holes to finished size at locations (5.338/ 5.985/ 10.832 REF) as per dwg D2580 sheet 7. | | | | | | | | |
| | 4-Drill pilot holes for aft cap using DT8215, Open to finished size. | | | | | | | | |
| 140 | QC5- Inspect part completeness to step on W/O | 0.00 | | | | | | | |
| *140* | | | | | | | | | |
| QC | Memo | 0.00 | | | | | | | |
| Quality Control | | | | | | | | | |

02/12/08/29

1 0

12/08/29

DAS 18

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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 Required Date: 8/10/12 Req'd Qty: 1.00 ***1*** Customer:
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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

| Sequence ID/ Work Center ID | Operation Description | Set Up/ Run Hours | Tool ID | Tool # | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
|----------------------------------|---|----------------------|---------|--------------------|--------------|---------------|---------------|------------------|-------------------|
| 150 *150* Skidtubes | Skidtubes | 0.00 | | | | | | | |
| | Memo | 0.00 | | | | | | | |
| | 1-Weld step D2576 as per Dwg. D2580 and QSI004 A/R Aluminum Rod <i>m122399</i> | | | <i>86 12/08/29</i> | | | | | |
| | 2-Touch up alodine on run on wearplate holes prior to swaging | | | | | | | | |
| | 3- Insert D4202-1 spacer, swage as per QSI002 and trim/ grind flush per QSI002 and as per dwg | | | | | | | | <i>CF 12.8.29</i> |
| 160 *160* QC | QC10- Inspect visual per QSI004- ground welds | 0.00 | | | | | | | |
| | <i>Paul CAP only</i> | | | <i>12/08/30</i> | | | | | |
| | Memo | 0.00 | | | | | | | |
| 170 *170* QC | QC5- Inspect part completeness to step on W/O | 0.00 | | | | | | | |
| | Memo | 0.00 | | | | | | | |
| | | | | <i>12/08/30</i> | | | | | |

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
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Item ID: D205-634-141

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Replacement Skidtube

Start Date: 7/09/12 Start Qty: 1.00 *1*

Cust Item ID:

Required Date: 8/10/12 Req'd Qty: 1.00 *1*

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop *NR2*

| Sequence ID/ Work Center ID | Operation Description | Set Up/ Run Hours | Tool ID | Tool # | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
|--------------------------------|---|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
| 210 | Assemble as per dwg | 0.00 | | | | | | | |
| *210* | HandFinishing | | | | | | | | |
| Hand Finish | Memo | 0.00 | | | | | | | |
| Hand Finishing | 1-Install inserts & wearplates as per Dwg. D2580. Use a drop of Sikaflex on insert holes before installing wearplates A/R Sikaflex-291 <u>122443</u> Sikaflex expire date: <u>12/03</u> | | | | | | | | |
| | 2-Coat D2594-3 O' rings with Petroleum Jelly and install on D2594 | | | | | | | | |
| | 3- Install aft cap as per dwg | | | | | | | | |
| | 4- Wing walk as per dwg Batch# <u>122320</u> | | | | | | | | |
| 220 | QC5- Inspect part completeness to step on W/O | 0.00 | | | | | | | |
| *220* | | | | | | | | | |
| QC | Memo | 0.00 | | | | | | | |
| Quality Control | Inspect Aft Cap, Fwd Step and Wing Walk of work to Current Step Inspect for Foreign objects per QSI 024 | | | | | | | | |

1 8 (2P) 12/08/31

DAS 16 12/09/04

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Item ID: D205-634-141 Accept *N900040100* Setup Start *NS1*
 Revision ID: Stop *NS2*
 Item Name: Replacement Skidtube
 Start Date: 7/09/12 Start Qty: 1.00 *1* Cust Item ID:
 Required Date: 8/10/12 Req'd Qty: 1.00 *1* Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start *NR1*
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

| Sequence ID/ Work Center ID | Operation Description | Set Up/ Run Hours | Tool ID | Tool # | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
|--------------------------------|---|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
| 230 | | 0.00 | | | | | | | |
| *230* | Packaging | | | | | 1 | 2 | 2 | 12/09/10 |
| Packaging | Memo | 0.00 | | | | | | | |
| Packaging | Identify and pack for shipping as per PPPD205-634-141 | | | | | | | | |
| | Location: _____ | | | | | | | | |
| | PPP Rev: _____ | | | | | | | | |
| 240 | | 0.00 | | | | | | | |
| *240* | QC21- Final Inspection - Work Order Release | | | | | | | | 12/9/12 |
| QC | Memo | 0.00 | | | | | | | |
| Quality Control | | | | | | | | | |

112-09-11

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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NOTE: Date & initial all entries

Picklist Print

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Work Order ID: 86930

Parent Item: D205-634-141

Parent Item Name: Replacement Skidtube

Start Date: 7/09/12

Required Date: 8/10/12

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP RevA 11.09.14 new issue EC verified by:DD
ECN11-684 DD VERF:EC

IPP REV:B 12.01.23 AS PER

| Component Item ID/ Item Name | Replacement Item ID | Mfg/ Purch | Bin Item | Primary Location | Last Location | Route Seq ID | Unit of Measure | Qty on Hand | Qty per Kit | Total Qty | Qty Issued | Date Issued | Status |
|--|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|-----------------|-------------|--------------|---------------|----------------|--------|
| AN4-45A Bolt | | Purchased | No | | | 210 | Each | 110.0000 | 8 | 8 | 8 | 12/08/31 | |
| | | | | <u>Location</u> | | <u>Loc Qty</u> | | <u>Loc Code</u> | | | | | |
| | | | | ST350A | | 110 | | | | | | | |
| | | | | 118926 | | 59 | | | | | | | |
| | | | | 121444 ✓ | | 1 | | | | | | | |
| | | | | 122151 | | 50 | | | | | | | |
| D2500-1-190 Ext'n - I' Beam Tube 4" | | Manufactured | No | | | 110 | Each | 138.0000 | 1 | 1 | 1 | 12/08/28 | |
| | | | | <u>Location</u> | | <u>Loc Qty</u> | | <u>Loc Code</u> | | | | | |
| | | | | HALL | | 138 | | | | | | | |
| | | | | 74777 | | 8 | | | | | | | |
| | | | | 80061 | | 38 | | | | | | | |
| | | | | 85483 | | 92 | | | | | | | |
| D2570 Bushing | | Manufactured | No | | | 210 | Each | 843.0000 | 16 | 16 | 16 | 12/08/31 | |
| | | | | <u>Location</u> | | <u>Loc Qty</u> | | <u>Loc Code</u> | | | | | |
| | | | | ST011 | | 843 | | | | | | | |
| | | | | 72960 | | 41 | | | | | | | |
| | | | | 78586 | | 9 | | | | | | | |
| | | | | 79493 | | 12 | | | | | | | |
| | | | | 81956 | | 24 | | | | | | | |
| | | | | 81957 | | 122 | | | | | | | |
| | | | | 82874 | | 35 | | | | | | | |
| | | | | 85411 | | 400 | | | | | | | |
| | | | | 85412 | | 200 | | | | | | | |
| D2596 Web, 205 Skidtube | | Manufactured | No | | | 110 | Each | 1.0000 | 1 | 1 | 1 | 12/08/28 | |
| | | | | <u>Location</u> | | <u>Loc Qty</u> | | <u>Loc Code</u> | | | | | |
| | | | | LG | | 1 | | | | | | | |
| | | | | 80820 | | 1 | | | | | | | |

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Work Order ID: 86930

Parent Item: D205-634-141

Parent Item Name: Replacement Skidtube

Start Date: 7/09/12

Required Date: 8/10/12

Start Qty: 1.00

Required Qty: 1.00

D4202-1 Manufactured No 150 Each 596.0000 24 24 CF 12.8.29
Spacer

| Location | Loc Qty | Loc Code |
|----------|---------|----------|
| 85453 LG | 556 | 12 |
| 77727 | 5 | |
| 83263 | 3 | 12 |
| 84763 | 117 | |
| 86003 | 431 | |
| LG002 | 40 | |
| 78806 | 6 | |
| 79810 | 34 | |

D4406-041 Manufactured No 210 Each 2.0000 1 1 2P 12/08/31
Fwd Wearplate Assembly

| Location | Loc Qty | Loc Code |
|------------|---------|----------|
| Return2012 | 2 | |
| 74147 | 2 | |

D4406-043 Manufactured No 210 Each 10.0000 1 1 2P 12/08/31
Aft Wearplate Assembly

| Location | Loc Qty | Loc Code |
|------------|---------|----------|
| FP001 | 8 | |
| 82886 ✓ | 8 | |
| Return2012 | 2 | |
| 74148 | 2 | |

| W/O: | | WORK ORDER CHANGES | | | | | |
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Work Order ID: 86930

Parent Item: D205-634-141

Parent Item Name: Replacement Skidtube

Start Date: 7/09/12

Required Date: 8/10/12

Start Qty: 1.00

Required Qty: 1.00

MS21042-4
USE MS21042L4

Purchased No

210 Each 1,076.0000

8 8 12/08/31

| Location | Loc Qty | Loc Code |
|----------------|---------|----------|
| FP002 122452 ✓ | 1 | |
| 105054 | 1 | |
| ST299 | 1075 | |
| 100743 | 9 | |
| 104683 | 3 | |
| 106051 | 2 | |
| 10747 | 1 | |
| 119124 | 1000 | |
| 5461 | 1 | |
| 6844 | 19 | |
| 7690 | 24 | |
| 8182 | 4 | |
| 9063 | 8 | |
| 9229 | 4 | |

D2576-3
Step (maching detail)

Manufactured No

150 Each 68.0000

1 1 12/08/29

| Location | Loc Qty | Loc Code |
|----------|---------|----------|
| LG | 68 | |
| 74136 | 16 | |
| 82257 | 52 | |

D2855
Cap

Manufactured No

210 Each 23.0000

1 1 12/08/31

| Location | Loc Qty | Loc Code |
|----------|---------|----------|
| FP001 | 20 | |
| 84952 ✓ | 20 | |
| FP002 | 3 | |
| 65519 | 2 | |
| 73347 | 1 | |

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Shop Packet Print

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| W/O: | | WORK ORDER CHANGES | | | | | |
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Work Order ID: 86930

Parent Item: D205-634-141

Parent Item Name: Replacement Skidtube

Start Date: 7/09/12

Required Date: 8/10/12

Start Qty: 1.00

Required Qty: 1.00

AN3-5A Purchased No 210 Each 769.0000 2 2 2 12/08/31

Bolt

| Location | Loc Qty | Loc Code |
|----------|---------|----------|
| ST350 | 769 | |
| 115371 | 46 | |
| 117423 | 121 | |
| 119355 | 200 | |
| 120187 ✓ | 396 | |
| 121185 | 6 | |

AN960JD10L

*NAS1149D0332J ✓ Purchased

No

210 Each 0.0000

2 2 2 12/08/31

Washer

D2594-3

Manufactured No

210 Each 2,170.0000

8 8 8 12/08/31

O-Ring, 205 Skidtube

| Location | Loc Qty | Loc Code |
|----------|---------|----------|
| FP001 | 2170 | |
| 65518 | 41 | |
| 79496 | 984 | |
| 79573 | 50 | |
| 79755 ✓ | 1095 | |

D2594-1

Manufactured No

210 Each 1,319.0000

8 8 8 12/08/31

Plug, 205 Skidtube

| Location | Loc Qty | Loc Code |
|----------|---------|----------|
| FP001 | 64 | |
| 73401 | 30 | |
| 74442 | 6 | |
| 79495 | 28 | |
| FP002 | 429 | |
| 85454 ✓ | 429 | |
| FP-A | 826 | |
| 73401 | 0 | |
| 78590 | 13 | |
| 84951 | 396 | |
| 86391 | 417 | |

July-09-12 2:50:10 PM

Shop Packet Print

Page 4

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
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NOTE: Date & initial all entries

| LIST OF MATERIALS | | | | | |
|-------------------|-------------|-------------|-------------|---|---------------------|
| ITEM | QTY -041 | QTY -045 | QTY -047 | PART NUMBER | DESCRIPTION |
| 1 | X | | | D2580-041 | SKIDTUBE ASSEMBLY |
| 2 | | X | | D2580-045 | SKIDTUBE ASSEMBLY |
| 3 | | | X | D2580-047 | SKIDTUBE ASSEMBLY |
| 4 | 1 | 1 | 1 | D2500-1-190 | EXTRUSION |
| 5 | | | 16 | D2570 | BUSHING |
| 6 | 1 | 1 | 1 | D2576-3 | STEP |
| 7 | 20 | 24 | 25 | D2579 | SPACER |
| 8 | 16 | 16 | 8 | D2594-1 | PLUG |
| 9 | 16 | 16 | 8 | D2594-3 | O-RING |
| 10 | 1 | 1 | 1 | D2596 | 205 WEB |
| 11 | 1 | 1 | 1 | D2855 | AFT CAP |
| 12 | 1 | 1 | | D3564-5 | WEARSHOE |
| 13 | 1 | 1 | | D3564-9 | WEARSHOE |
| 14 | 1 | 1 | | D3564-11 | WEARSHOE |
| 15 | 1 | 1 | | D3564-13 | WEARSHOE |
| 16 | 2 | 2 | | D3566-1 | GASKET |
| 17 | 1 | 1 | | D3566-5 | GASKET |
| 18 | 1 | 1 | | D3566-13 | GASKET |
| 19 | | | 1 | D4406-041 | WEARPLATE ASSEMBLY |
| 20 | | | 1 | D4406-043 | WEARPLATE ASSEMBLY |
| 21 | 50 | 50 | | ALST-1032-130 or AKS7-1032-130 or AKS4-1032-130 or AELS-1032-130 | INSERT |
| 22 | 50 | 50 | | AN3C4A | BOLT |
| 23 | 2 | 2 | 2 | AN3-5A | BOLT |
| 24 | | | 8 | AN4-45A | BOLT |
| 25 | 50 | 50 | | NAS1149C0332R | WASHER (AN960C10L) |
| 26 | 2 | 2 | 2 | NAS1149D0332J | WASHER (AN960JD10L) |
| 27 | | | 8 | MS21042-4 | NUT (OR MS21042L4) |

GENERAL NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: CHEMICAL CONVERSION PER DART QSI 005 4.1 PRIOR TO INSERTING D2596 WEB
POWDER COAT ASSEMBLY (-041/-047) GLOSS WHITE (REF 4.3.5.1) PER DART QSI 005 4.3
POWDER COAT ASSEMBLY (-045) GREEN SANDEX (REF 4.3.5.8) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT AS INDICATED PER DART QSI 005 4.4.
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: D2580-041 = 34.5 lbs
D2580-045 = 34.5 lbs
D2580-047 = 37.7 lbs
- 8) WELDING PER DART QSI 004.
- 9) INSERT D2596 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241 ADHESIVE PER DART QSI 015 BEFORE BENDING. ENSURE HOLES LINE-UP.
- 10) BEND AS A SMOOTH RADIUS STARTING WITH A MAXIMUM CENTERLINE RADIUS OF 60 AND ENDING WITH A MINIMUM RADIUS OF 30. A MAXIMUM REDUCTION OF 0.200 IN DIAMETER IS ALLOWABLE IN THE BENT PORTION OF THE TUBE.
- 11) USE DART DRILL TEMPLATE DT8217 & DT8937 ONLY FOR D2580-041/-045 TO LOCATE AND DRILL Ø0.297 HOLES FOR WEARSHOE INSERTS. INSTALL ALST-1032-130 PER SECTIONS B-B AND F-F (50 PLACES) AFTER FINISH. INSTALL AN3C4A BOLTS AND NAS1149C0332R WASHERS WITH SIKAFLEX-241/-291.
- 12) INSERT D2594-1 PLUG C/W D2594-3 O-RING IN HOLES MARKED 'P' (BOTH SIDES OF TUBE) AFTER FINISH (16 PLACES FOR D2580-041/-045 AND 8 PLACES FOR D2580-047)
- 13) IT IS ACCEPTABLE TO GRIND A RELIEF IN THE D2855 AFT CAP TO PREVENT INTERFERENCE WITH THE SPACER AT THIS LOCATION

DEO ATTACHED

RELEASED

2011-08-29

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER

NO. 86930 MCT
12/07/10

| | | | |
|------------|---|----|----------|
| E | ADD D2580-047 (ZN C4-7) AND D2580-7 (ZN B3-B); INCLUDED DEO D2580-D-1; REFORMATTED DRAWING TO CURRENT STANDARDS; DT8217 & DT8937 WAS TD2577-205 (ZN C4-1) | RF | 11.06.21 |
| D | CHANGE TO SS WEARPLATES AND GASKETS, INCLUDE DEO 9124/ 9163 | PH | 07.04.05 |
| C | REDRAWN, INCLUDED DEO 9094/ 9097 | CP | 98.08.26 |
| B | AS MANUFACTURED | DS | 96.12.02 |
| A | NEW ISSUE | DS | 96.09.16 |
| REV. | DESCRIPTION | BY | DATE |
| DESIGN | # | | |
| DRAWN | RF | | |
| CHECKED | # | | |
| MFG. APPR. | # | | |
| APPROVED | # | | |
| DE APPR. | # | | |
| DATE | 11.06.21 | | |

DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA

DRAWING NO. D2580
REV. E
SHEET 1 OF 8
TITLE 205 SKIDTUBE ASSEMBLY
SCALE NTS

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| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
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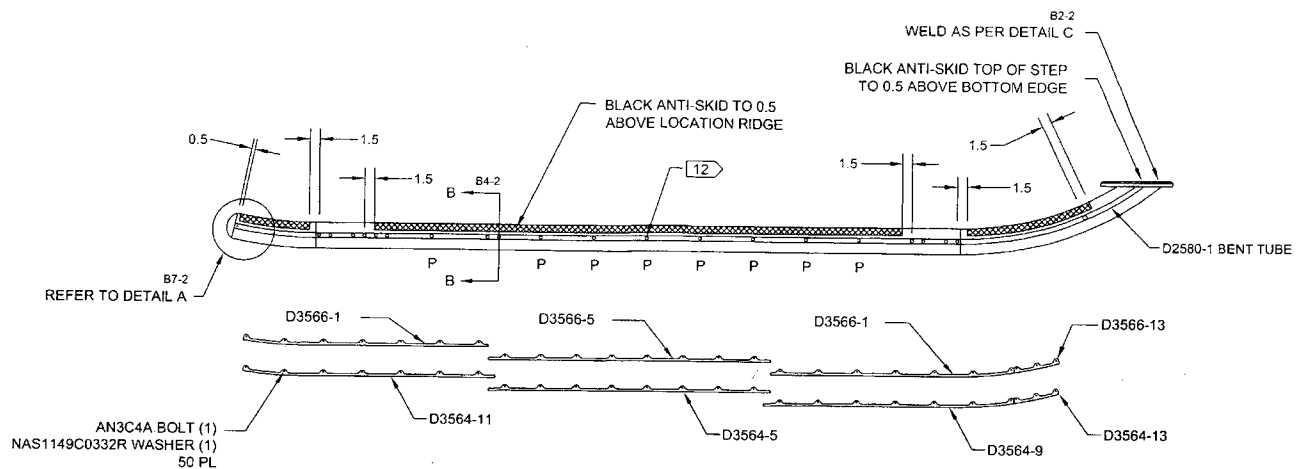
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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
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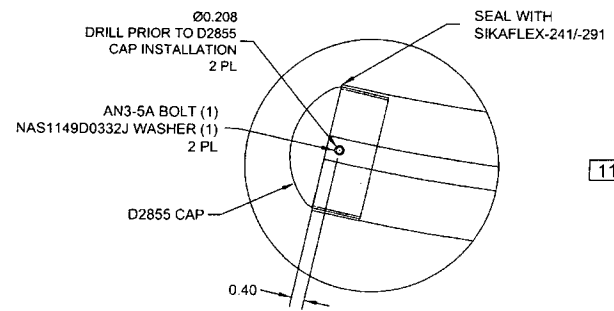
NOTE: Date & initial all entries

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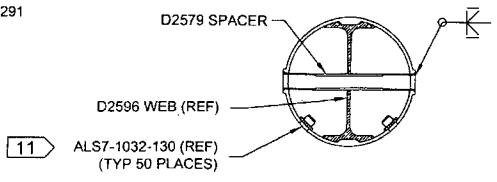


D2580-041 ASSEMBLY DETAIL

DETAIL A C7-2
SCALE 5X

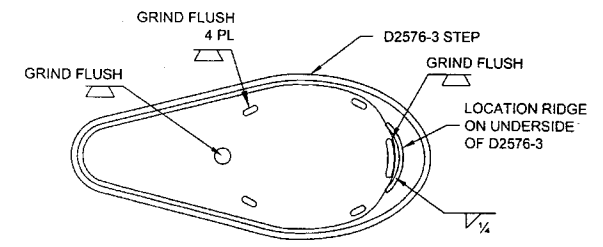


SECTION B-B D9-2
SCALE 5X



- AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:
1. CHAMFER HOLE 0.050 X 45°
 2. INSERT D2579 SPACER (20 PLACES)
 3. WELD INTO PLACE AND GRIND FLUSH
 4. C'BORE D2579 SPACER TO Ø0.437 X 1.00 DEEP

DETAIL C D3-2
SCALE 5X



| | | | |
|------------|----------|--|--------------|
| DESIGN | 4 | DART AEROSPACE LTD | |
| DRAWN | RF | HAWKESBURY, ONTARIO, CANADA | |
| CHECKED | 140 | DRAWING NO. | REV. E |
| MFG. APPR. | 140 | D2580 | SHEET 2 OF 8 |
| APPROVED | 140 | TITLE | SCALE |
| DE APPR. | 140 | 205 SKIDTUBE ASSEMBLY | NTS |
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DEO ATTACHED
RELEASED
2011-08-29

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
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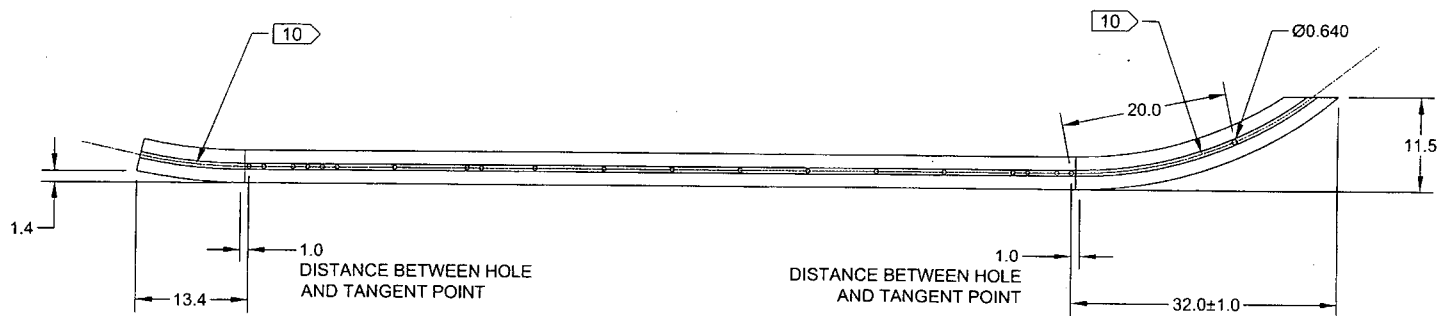
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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
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| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
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NOTE: Date & initial all entries

86930



D2580-1 BENT TUBE
(MAKE FROM D2580-101 TUBE)

DEO ATTACHED

RELEASED
2011-08-28
JW

| | | | |
|------------|----------|--|--------------|
| DESIGN | RF | DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA | |
| DRAWN | RF | | |
| CHECKED | 10 | DRAWING NO. | REV. E |
| MFG. APPR. | 10 | D2580 | SHEET 3 OF 8 |
| APPROVED | 10 | TITLE | SCALE |
| DE APPR. | 10 | 205 SKIDTUBE ASSEMBLY | NTS |
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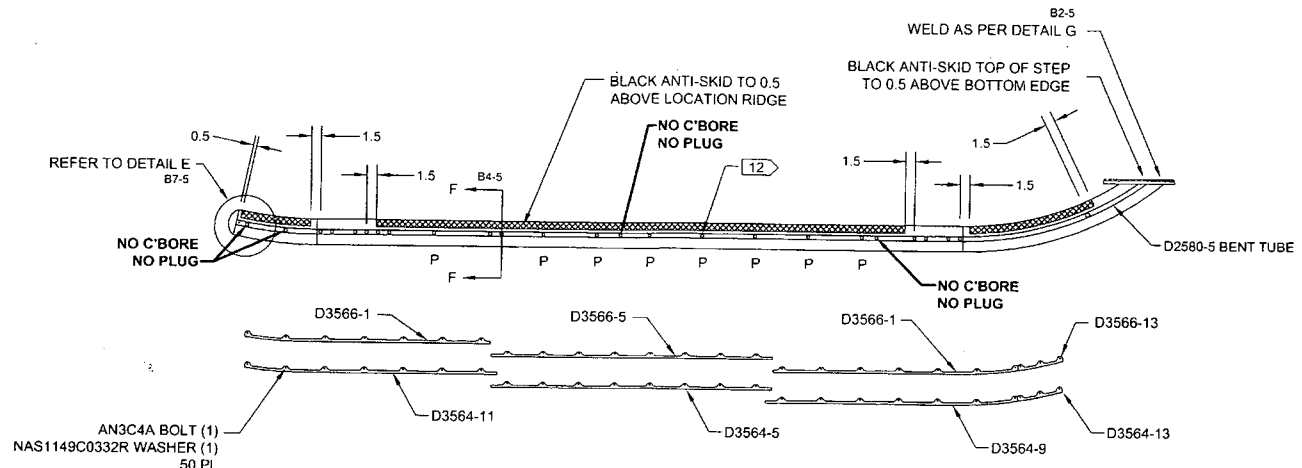
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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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NOTE: Date & initial all entries

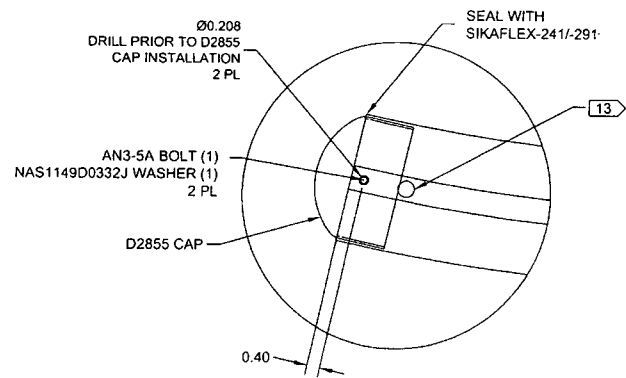
86930



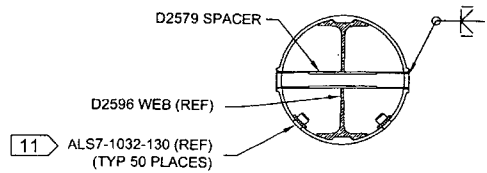
D2580-045 ASSEMBLY DETAIL

DEO ATTACHED
RELEASED
2011-08-29
AM

DETAIL E D7-5
SCALE 5X

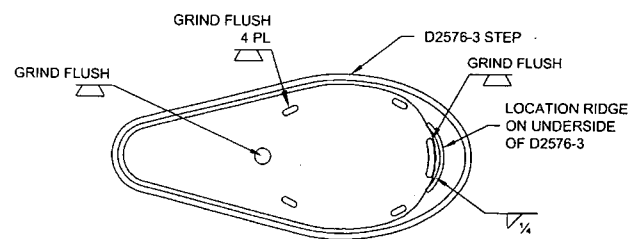


SECTION F-F D5-5
SCALE 5X



AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:
1. CHAMFER HOLE 0.050 X 45°
2. INSERT D2579 SPACER (24 PLACES)
3. WELD INTO PLACE AND GRIND FLUSH
4. C'BORE D2579 SPACER TO Ø0.437 X 1.00 DEEP

DETAIL G D3-5
SCALE 5X



| | | | |
|------------|----------|--|--------------|
| DESIGN | 4 | DART AEROSPACE LTD | |
| DRAWN | RF | HAWKESBURY, ONTARIO, CANADA | |
| CHECKED | 10 | DRAWING NO. | REV. E |
| MFG. APPR. | 13 | D2580 | SHEET 4 OF 8 |
| APPROVED | 10 | TITLE | SCALE |
| DE APPR. | 11 | 205 SKIDTUBE ASSEMBLY | NTS |
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| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
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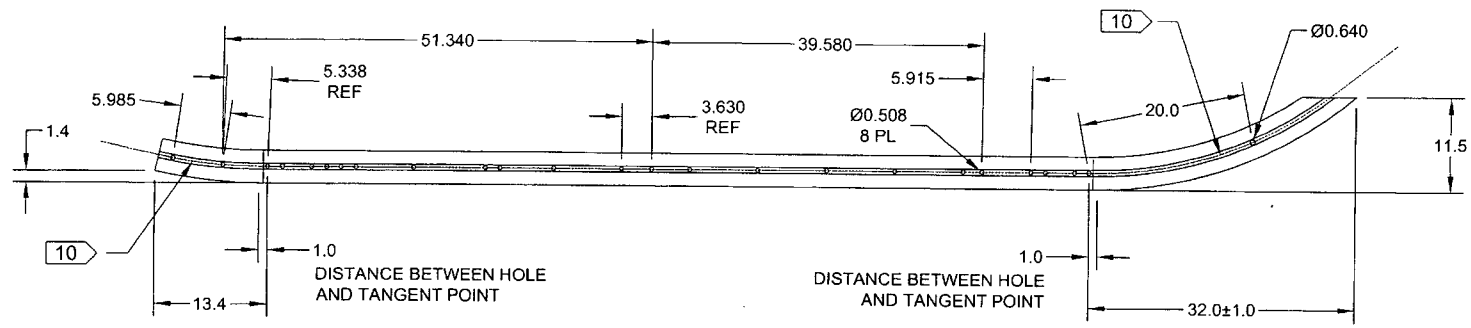
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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
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NOTE: Date & initial all entries

869.30



D2580-5 BENT TUBE
(MAKE FROM D2580-101 TUBE)

DEO ATTACHED
RELEASED
2011-08-29

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|------------|----------|---|--------------|
| DESIGN | RF | DART AEROSPACE LTD | |
| DRAWN | RF | HAWKESBURY, ONTARIO, CANADA | |
| CHECKED | RF | DRAWING NO. | REV. E |
| MFG. APPR. | RF | D2580 | SHEET 5 OF 8 |
| APPROVED | RF | TITLE | SCALE |
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| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
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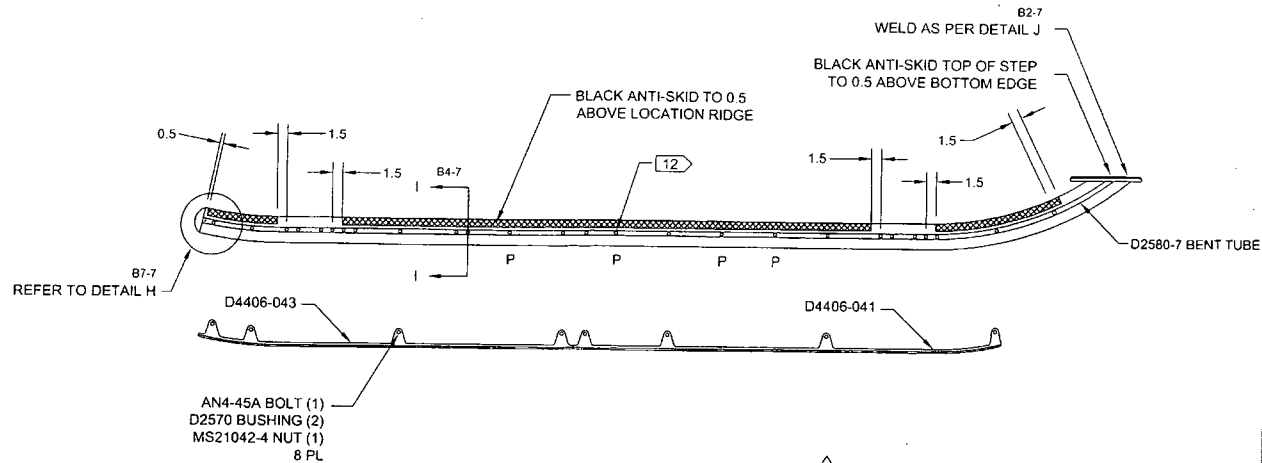
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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

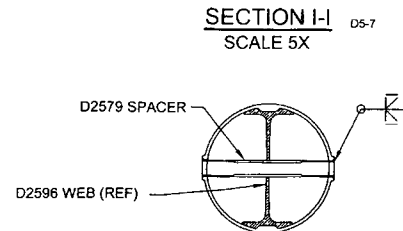
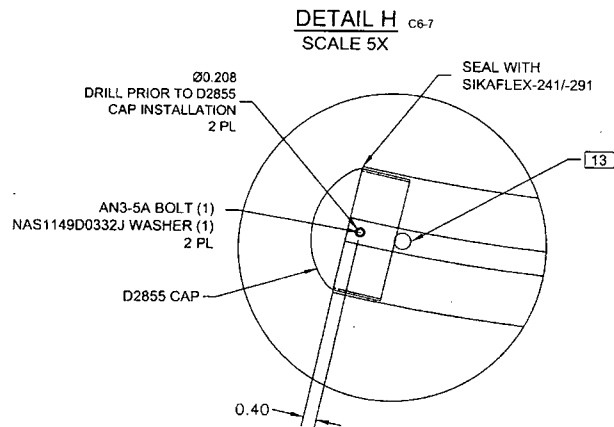
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| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
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NOTE: Date & initial all entries

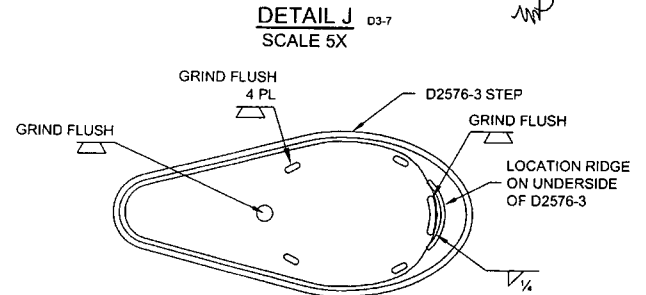
86930



D2580-047 ASSEMBLY DETAIL E



- AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:
1. CHAMFER HOLE 0.050 X 45°
 2. INSERT D2579 SPACER (25 PLACES)
 3. WELD INTO PLACE AND GRIND FLUSH
 4. C'BORE D2579 SPACER TO Ø0.437 X 1.00 DEEP



| | | | |
|------------|----------|--|--------------|
| DESIGN | # | DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA | |
| DRAWN | RF | | |
| CHECKED | 10 | DRAWING NO. | REV. E |
| MFG. APPR. | 10 | D2580 | SHEET 6 OF 8 |
| APPROVED | 10 | TITLE | SCALE |
| DE APPR. | 10 | 205 SKIDTUBE ASSEMBLY | NTS |
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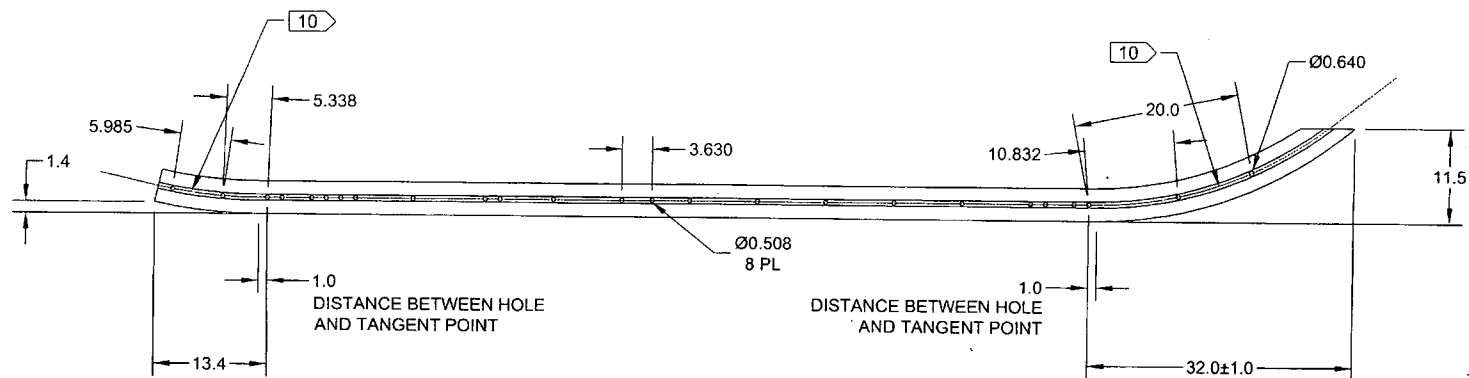
| W/O: | | WORK ORDER CHANGES | | | | | |
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| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
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| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
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NOTE: Date & initial all entries



D2580-7 BENT TUBE
(MAKE FROM D2580-101 TUBE)



DEO ATTACHED

RELEASED
2011-08-29

| | | | |
|------------|----------|--|--------|
| DESIGN | RF | DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA | |
| DRAWN | RF | | |
| CHECKED | RF | DRAWING NO. D2580 | REV. E |
| MFG. APPR. | RF | SHEET 7 OF 8 | |
| APPROVED | RF | TITLE | SCALE |
| DE APPR. | RF | 205 SKIDTUBE ASSEMBLY | NTS |
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| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
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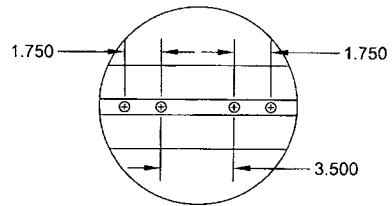
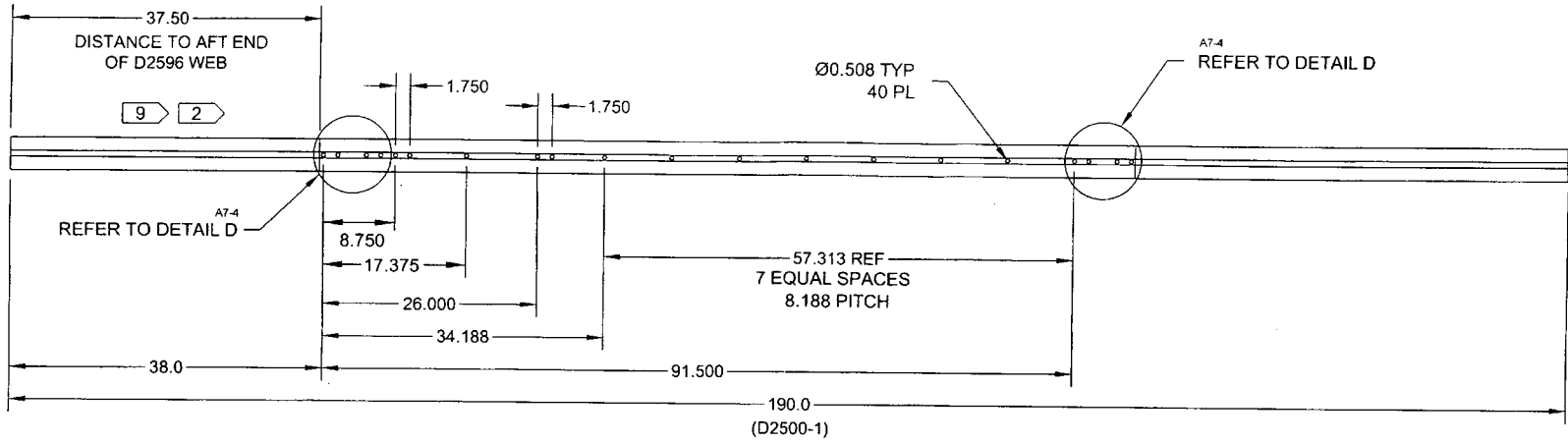
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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

NOTE: Date & initial all entries

8/6/93



DETAIL D D3-4
SCALE 5X C7-4

D2580-101 TUBE

DEO ATTACHED
RELEASED
2011-08-29

| | | | |
|------------|----------|--|--------------|
| DESIGN | RF | DART AEROSPACE LTD | |
| DRAWN | RF | HAWKESBURY, ONTARIO, CANADA | |
| CHECKED | RF | DRAWING NO. | REV. E |
| MFG. APPR. | RF | D2580 | SHEET 8 OF 8 |
| APPROVED | RF | TITLE | SCALE |
| DE APPR. | RF | 205 SKIDTUBE ASSEMBLY | NTS |
| DATE | 11.06.21 | <small>COPYRIGHT © 1996 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small> | |

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
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NOTE: Date & initial all entries

| | | | | | | | |
|----------------------|--------------------------------|-------------------------|---|--|--------------------------------|---------------------------|--------------|
| DRAWING NO. D2580 | TITLE 205 SKIDTUBE ASSEMBLY | REV. E | DART AEROSPACE LTD ENGINEERING ORDER | | D.E.O. NO. D2580-E-1 | SHEET NO. SHEET 1 OF 1 | SCALE NTS |
| DRAWN <i>JP</i> | CHECKED <i>ASS</i> | MFG. APPR. <i>EC</i> | APPROVED <i>[Signature]</i> | | DE APPR. <i>[Signature]</i> | | |
| DATE 11.12.13 | DATE 11.12.13 | DATE 11.12.13 | DATE 11.12.13 | | DATE 11.12.13 | | |

PURPOSE:

CHANGE ALL C'BORED WELDED CROSSBOLT SPACERS TO SWAGED SPACERS

CHANGE:

PARTS LIST IS AMENDED AS FOLLOWS:

WAS

| QTY | QTY | QTY | PART NUMBER | DESCRIPTION |
|------|------|------|-------------|-------------------|
| -041 | -045 | -047 | | |
| 20 | 24 | 25 | D2579 | CROSS BOLT SPACER |

IS

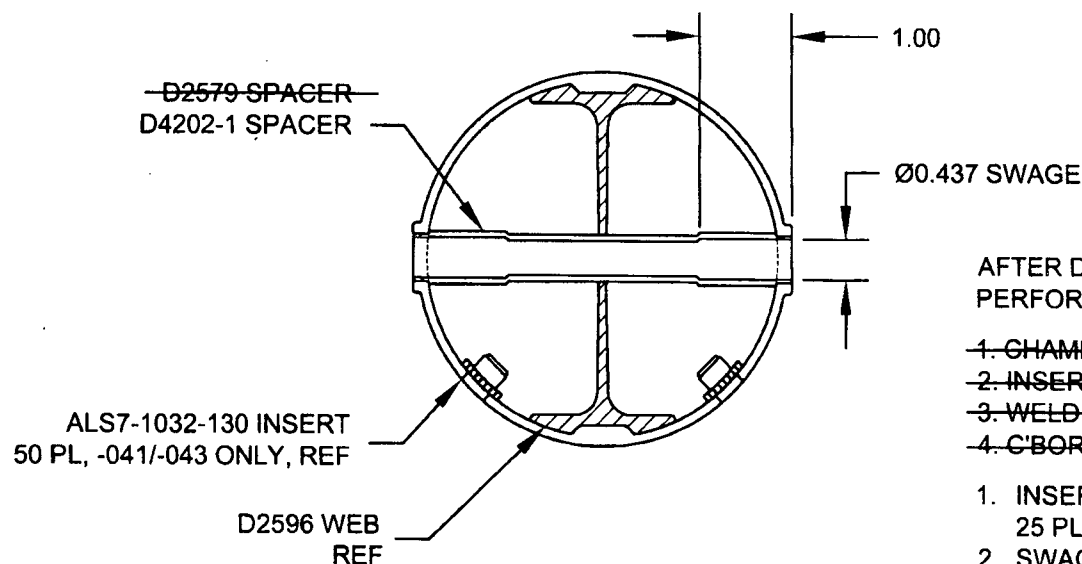
| | | | | |
|----|----|----|---------|-------------------|
| | 4 | | * D2579 | CROSS BOLT SPACER |
| 20 | 20 | 25 | D4202-1 | SPACER |

SECTION B-B, SECTION F-F, & SECTION I-I ARE AMENDED AS FOLLOWS FOR ALL HOLES THAT WERE ORIGINALLY C'BORED:

*** FOR -045 SKIDTUBE ONLY:**

WELD 4X D2579 SPACERS PER DWG IN LOCATIONS MARKED "NO C'BORE".
REF SHEET 4 OF DWG.

RELEASED
2011-12-14



AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:

- ~~1. CHAMFER HOLE 0.050 X 45°~~
- ~~2. INSERT D2579 SPACER (20 PLACES)~~
- ~~3. WELD INTO PLACE AND GRIND FLUSH~~
- ~~4. C'BORE D2579 SPACER TO Ø0.437 X 1.00 DEEP~~

1. INSERT D4202-1 SPACER, 20 PL (-041) OR 20 PL (-045) OR 25 PL (-047)
2. SWAGE TO Ø0.437 X 1.00 DEEP PER QSI 002
3. TRIM / GRIND FLUSH PER QSI 002

SECTION B-B, F-F, I-I
NOT TO SCALE

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
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NOTE: Date & initial all entries